DOCUMENT RESUME

ED 197 578 EC 132 439

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TITLE Appropriate Educational Placements for Hearing Impaired Children.
INSTITUTION ERIC Clearinghouse on Handicapped and Gifted Children, Reston, Va. Council for Exceptional Children.
SPONS AGENCY National Inst. of Education (ED), Washington, D.C.
PUB DATE Aug 80
CONTRACT 400-76-0119
NOTE 29p.: ERIC Exceptional Child Education Report Series, IAP No. 79-10.
AVAILABLE FROM ERIC Clearinghouse on Handicapped and Gifted Children, The Council for Exceptional Children, 1920 Association Dr., Reston, VA 22091 (Free while supply lasts).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Accessibility (for Disabled); Ancillary School Services; Curriculum Development; Elementary Secondary Education; *Hearing Impairments; Inservice Teacher Education; *Mainstreaming; Program Costs; Psychological Needs; Sign Language; Special Schools; *Student Characteristics; *Student Placement

ABSTRACT

The report presents an overview on the status of appropriate placements for hearing impaired students. Information is presented in question and answer format on such topics as the definition and extent of hearing impairments, hearing aids, lipreading, speech difficulties of deaf children, sign language, psychological needs of deaf students, the implications of an appropriate education for the hearing impaired, educational placement alternatives, least restrictive environment, costs of education, student and program characteristics affecting placement decisions, the role of special schools, barrier free environments, support and related services, the functions of an interpreter, curriculum modifications, deaf adult role models, inservice needs of teachers, parent education, and state resources. (CL)

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ED197578

APPROPRIATE EDUCATIONAL PLACEMENTS FOR HEARING IMPAIRED CHILDREN

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August 1980

A Product of the ERIC Clearinghouse on Handicapped and Gifted Children
The Council for Exceptional Children
1920 Association Drive
Reston, Virginia 22091

EC 132 439

A publication of the ERIC Clearinghouse on Handicapped and Gifted Children. Publication Date, 1980.

The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091

This publication was prepared with funding from the National Institute of Education, US Department of Education, under Contract no. 400-76-0119. Contractors undertaking such projects under government sponsorship are encouraged to express freely their judgment in professional and technical matters. Prior to publication the manuscript was submitted to The Council for Exceptional Children for critical review and determination of professional competence. This publication has met such standards. Points of view, however, do not necessarily represent the official view or opinions of either The Council for Exceptional Children, the National Institute of Education, or the Department of Education.

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How can hearing impaired children best be described?

Hearing impaired children have the common universal needs for security, relationships, esteem, and knowledge. They possess the same basic differences in personalities, skills, motivation, intelligence, and perceptions as any other children. Among hearing impaired children, important differences exist in communication and language skills, interpersonal relationships, physical development, maturity levels, and academic skills. Thus, it is misleading, oversimplifying, and unfair to label a hearing impaired child in stereotyped terms.

A hearing impairment is a communicative handicap which generally allows a child to see the hustle-bustle of life without permitting access to its meaning. Deafness is comparable to watching television without the sound or to traveling in a foreign speaking environment. For some it's like reading a book that shows only the top half of the letters and skips half the words.

Input must precede language output. The lack of language input for a child results in an individual deprived of a language symbol system and limited in perception of the what's, why's, and how's of the surrounding world. A child afflicted with a hearing impairment from infancy needs a focused language curriculum based on concepts and experiences as well as a strengthened auditory and visual communication system. In the first three grades it is essential that programs emphasize communication skills with peers and teachers while the child learns to read, write, and spell. Some children with severe losses have good communication skills, while others with milder losses have severe communication problems.

In the United States, 13 million people have hearing impairments; 80,000 are school aged children with different degrees of hearing loss and skills. The more severe the hearing loss, the less will be the initial skill in communication and language areas. Intelligence in the hearing impaired population is distributed the same as in the normal population, but because of the communication deprivation academic test scores may be several grades below the norm. Generally speaking, the skill level for a hearing impaired child is contingent upon several factors: 1) degree of hearing loss; 2) type of hearing loss and the ability to discriminate sounds; 3) age of onset of deafness; 4) age of discovery of loss; and 5) the kinds of modifications made in the child's environment to enhance comprehension and interaction.

What is a hearing impairment?

The regulations governing P. L. 94-142 define hearing loss as follows:

> Deaf means a hearing impairment which is so severe that a child's hearing is nonfunctional for the purpose of educational performance.
>
> Hard of hearing means a hearing impairment, whether permanent or fluctuating, which adversely affects a child's educational performance . . .

The term "hearing impaired" is used to describe hearing problems that may vary from a mild to a profound loss of hearing. There are many reasons for hearing damage, including heredity and illness.

Two characteristics of sound can be measured: 1) frequency, or different pitches, and 2) intensity, or loudness of sound. Sounds, such as a human voice, a bird chirping, a drill buzzing, or a musical instrument shrieking and breaking glass, occur at different frequency ranges. The strength (intensity) of each sound may vary from inaudible to painfully loud. Hearing loss is measured in decibels (dB) and an audiogram shows the hearing intensity level (in dB) required to hear selected frequencies in a range from 125 Hz (hertz) to 8000 Hz, the frequencies needed to receive human speech. Vowels are heard in the lower frequencies; "s" and "f" sounds are in the higher frequencies.

Hearing impairments are generally divided as follows:

-10 dB to 25 dB: Normal Range. Normal breathing is heard at 10 dB; leaves rustle at 25 dB.

25 dB to 40 dB: Mild Impairment. Soft sounds cannot be heard. Repetition may be required to understand what is said. It is hard to understand in noisy places and when more than one person talks. A quiet home at night or whispering occur at about 30 dB.

40 dB to 55 dB: Moderate Impairment. Sounds such as soft speech at 50 dB are not understood without amplification. Normal conversation is barely audible and may sound distorted.

55 dB to 75 dB: Moderately Severe Impairment. Normal conversation level, which is about 60 dB, will be inaudible without amplification, and may sound distorted.

75 dB to 95 dB: Severe Impairment. Only very loud sounds are heard, such as a vacuum cleaner or a shout at a distance of one foot (80 dB). Conversation must be amplified; however, some speech sounds will still be inaudible or distorted.

95 dB and up: Profound Impairment. Even loud noises, such as a power lawn mower (95 dB), a noisy factory (100 dB), music from a rock band (110 dB), or a propeller plane at take off (120 dB) may only be sensed as an indistinguishable rumble rather than actually being heard.

An individual's ability to hear and understand depends on hearing level (in decibels) for each frequency, the frequencies at which sound may be heard, and the ability to discriminate and understand combinations of sound. Amplification and auditory training may help, but neither will restore normalcy for the more severe hearing loss levels.

What is a hearing aid?

A hearing aid is an electronic device to amplify sounds. It has several components: a body which includes the battery and the microphone to pick up speech and environmental sounds; an earmold to be worn in the ear; and a cord or tube between the body and the earmold. Different kinds of hearing aids are available for different types and intensities of hearing losses.

Basically, there are two different types of hearing aids: 1) an ear level model, worn behind the ear, practically hidden from view, and 2) a body model, worn in a harness on the chest with a cord attached to the earmold in the ear. The specific type and model of the hearing aid is prescribed by an audiologist after a thorough evaluation of the child's hearing loss. The child's needs should be re-examined periodically.

A hearing aid amplifies sounds at selected frequencies. It does not restore normalcy or help the child to hear sounds where no hearing exists at certain frequencies. Nor does it enhance word discrimination if the child's hearing loss is such that sounds cannot be discriminated. Thus, a hearing aid amplifies all incoming sounds without making distinctions between the teacher's voice, the rustling of papers on desks, the shuffling of feet in the hallway, and traffic sounds through the window.

A teacher's command, "Okay, students, please fold your papers and I'll score them later," may sound like, "Okay, tudent, pl old our paper and I'll core the later" to one student; "OK todate plaa hold your papa and I'll ore lata" to another student; and "aad d ad ad, daaa ad aaa dada ad aaa adaa aaa aada" to another student.

Knowledge of the English language, of the situation at hand, use of residual hearing and of lipreading skills are three factors that enhance a student's receptive ability. In other words, if the student is familiar with the situation, can anticipate what may happen next, and has learned the rules of language, then, to some extent, "gaps" can be filled in. The degree to

which this can occur depends both on the type of hearing loss and on the kind of assistance received from the hearing aid. In sum, a hearing aid is a helpful device but should not be considered a panacea for all hearing problems.

What is lipreading?

Lipreading means watching the mouth to receive spoken language. It has been defined half in jest as "educational guesswork." Only about 30 percent of spoken English is visible on the lips. Consider the similar positions of the lips as these words are formed: pal, man, bat, pad, ban, mad. Did she say 26 men or 20 sick men? Is it 13 or 30 dollars? Was she described as fat or vain?

Lipreading or speechreading is often called an art rather than a skill: Some people have it and others never master it. There is no correlation between lipreading ability and intelligence. Deafness does not insure ability in lipreading; hearing people and deaf people have comparable skills in lipreading.

To confound matters further, some people are easier to lipread than others. Nearly invisible mouth movements or exaggerated lip movements, mustaches and beards, turned heads, and other obstacles make it more difficult to lipread.

Lipreading skill is enhanced by mastery of English, contextual knowledge, favorable situations (lighting, number of people engaged in communication, speaker's clarity) and the listener's type and level of hearing. Repeating or speaking more loudly does not aid the lipreader; rephrasing the statement, however, is often helpful.

Why is it difficult for a deaf child to speak?

Speech develops in the normal child through the process of imitating what is heard. This process begins at birth. Sounds and spoken words have no meaning for a child who is born deaf or who becomes deaf prior to language development. Deaf babies babble at six to nine months of age, but without the capacity for auditory stimulation, they soon stop experimenting with normal speech sounds. Without focused efforts and training, speech will not develop. Even with training, however, speech is likely to be significantly impaired if the child's hearing loss is severe. This does not mean that the child cannot develop language skills; speech and language are two separate entities. Language is a symbol system that includes reception and interpretation used for the sharing of thoughts and concepts, while speech is one of several modes for conveying ideas and information.

Deaf children may learn how to produce speech sounds, to formulate lip movements, and to combine them into linguistic patterns, but relatively few deaf children master normal speech even with intensive training.

The deaf child's speech may be understood only by the family, trained teachers of the deaf, or a few others with an ear for "deaf" speech. If a child has a moderate to severe hearing loss and wears amplification, he or she may be able to receive and understand speech sounds and words. With training, the child's speech may be understood by most people, even though it may not sound normal.

The less hearing a child has, the more he or she will depend on vision for information about the environment. If language is visually presented, that is, supplemented with clear lip movements, manual cues (sign language), and/or printed words, the child will learn words. This does not necessarily mean that the child's speech will be clearer.

What is sign language?

Sign language uses the hands to convey words and information. This is manual communication. A continuum of manual communication systems exists as follows:

- American Sign Language: This is a true language of signs, with syntax and principles of linguistic significance. Communication of concepts, ranging from the concrete to the abstract, may be conveyed by flying hands and accompanying facial and body movements. The pattern of sign "words" is different from English, just as French or Arabic is different from English. American Sign Language, is the third most used "foreign" language in the U.S.

- Signed English: This refers to the arrangement of signs to correspond to English syntax.

- Manually Coded English: This is the complete visual representation of English, using traditional and newly developed signs to present all the key and supporting words in English, including affixes such as verb endings or prefixes.

- Fingerspelling (Rochester Method): This refers to a letter by letter presentation of words spelled on the hand. As the English alphabet consists of 26 letters, there are 26 hand configurations.

The American Sign Language, known as ASL or Ameslan, is a truly different language, whereas the other categories may be considered communication codes for presenting English.

What mode of communication works best for hearing impaired children?

A consortium of communication methods encompasses the following:

1) Aural-Oral, use of residual hearing, speech, and lipreading;

2) Simultaneous Communication, which includes the use of the aural-oral channel, supplemented by signs and/or fingerspelling;

3) American Sign Language, which has been explained in the above discussion;

4) Cued Speech, which is the aural-oral method supplemented by cues (not signs) to assist in distinguishing between speech sounds;

5) Fingerspelling, often used with the aural-oral approach; and

6) Pantomime, the use of facial and body movements such as pointing, smiling, or shaking the head.

Each hearing impaired child has different skills and needs. The Total Communication approach matches appropriate communication mode(s) with the needs of the individual child, using "whatever works best." The communication mode selected should foster communicative and language growth, allow interaction between child and others, and permit a comfortable and stress free communicative environment.

The greater the child's hearing loss, the more he or she may need a visual mode of communication. A nationwide survey of communication modes used in educational programs for deaf children shows a pronounced trend toward use of the simultaneous method of communication. The needs of the deaf child, rather than the preference of the educational system, should be the determining factor.

What are the needs of hearing impaired students?

Basically, the needs of hearing impaired children are the same as those of nonhandicapped children. A helpful model to consider is Abraham Maslow's hierarchy of needs modified for hearing impaired children. When these are presented as a hierarchy of prepotent requirements, a natural sequence of needs emerges; each need must be met before proceeding to the following:

1) Security. This includes a sense of physical and emotional safety—being fed, clothed, and taken care of within a family, a comparable unit, or program.

2) Social. When the security need is met, a child will seek affiliation with family and peers. For a deaf child, the pivotal factor will be communication, the ability to understand and to respond to other people. Friends and social events play a large part in the child's need to belong.

3) Esteem. The individual needs to achieve ego satisfaction, to feel good about the self. A deaf child must feel that it is okay to be deaf, that deafness is in itself not a major obstacle to success in education and life. This requires a healthy acceptance of the child's deafness and whatever communication modes are used. Deaf role models such as deaf teachers or successful deaf adults play an important part in the child's development of esteem satisfaction.

4) Independence. If physical, social, and esteem needs are met, the child moves on to a higher level: autonomy, the ability to function as an independent individual. The environment must allow the child to function as fully and independently as possible, with special services as needed, in communicative and academic milieus. The child should be given responsibilities and experiences in order to develop knowledge and skills needed to make independent decisions about life and goals.

5) Self actualization. This is the highest level of basic needs to which a child may ascend, if the previous needs levels have been satisfied. On this level, self confidence allows the child to seek new experiences and challenges in order to realize his or her full potential.

To help the child reach full potential, the family and educational program must understand the ramifications of deafness and be prepared to make reasonable adjustments in the physical environment at home, in school, and in leisure activities.

What is the purpose of education?

The American educational system and compulsory attendance laws were established to provide each child with the opportunity to learn basic skills leading to social ability, citizenship, independence, and self sufficiency. Education is not an end in itself, but a process enabling students to develop cognitive and affective skills that will allow them to function as independent citizens with a place in society.

Education should include not merely what the "3 R's" are, but how to use the "3 R's" and other skills in order to live and work successfully. In other words, education for life skills includes academic, vocational, physical, social, emotional, and communicative development. This definition applies to hearing impaired children exactly as it does to all other children.

What is an appropriate education for hearing impaired students?

An appropriate education for a hearing impaired child may be considered simply as the program and environment conducive to maximum growth in the academic, social, vocational, emotional, and communicative areas, enabling the child to reach full potential. Within this environment, the child achieves satisfaction in security, social, esteem, independence, and self actualization needs. Furthermore, the concept of education should not be confined to the classroom but should include school related programs such as field trips and extracurricular activities; experiences on the playground, the streets, and within the community. In fact, for nonhandicapped children, experiences outside the classroom (including the home, neighborhood, and media) compose the educational building blocks which schools expand and refine. For hearing impaired children, those extracurricular experiences may involve a physical presence but a mental absence. Hence, education for the deaf must include the "unwritten" curriculum and opportunities for incidential learning and related skills.

The selection of an appropriate educational program and needed support services, through the Individualized Education Program (IEP) process, is but one step toward the provision of an appropriate education for hearing impaired children. Qualified personnel, an overall positive school attitude, and the child's own satisfaction are other important ingredients.

What is the least restrictive environment for a hearing impaired child?

The terms "appropriate education" and "least restrictive environment" (LRE) should be considered synonymous and interchangeable. In other words, the LRE is the placement option on the continuum identified as the most appropriate environment for the child, taking into consideration the child's goals, skills, and needs.

LRE means being able to participate in and contribute to class discussions. More basically, it means understanding what is happening in the classroom. It means the opportunity to take an active role in class plays and school organizations. It means being part of the ruckus in the

lunch room rather than perfunctorily rubbing elbows with nonhandicapped students. It means sharing tales of wow's and woe's with friends after school and with the family at dinnertime.

What are the educational placement alternatives for hearing impaired children?

The placement alternatives delineated in the P. L. 94-142 regulations and state laws should be considered a continuum of flexible possibilities rather than a hierarchy of fixed options.

There are four general categories of placement options within the public school setting:

- Regular class with no modifications or special services.
- Regular class, with support services. Instruction takes place in the regular classroom, with consultancies or special services provided to the teacher and/or the students, both deaf and nondeaf.
- Mixed setting. A student may spend part of the day in a regular classroom, and receive specialized instruction in a resource room or a self contained class. On the other hand, the child may be in a regular class for part of the day and attend a special school or special class for the remainder of the day.
- Special Class. The student is enrolled full time in a self contained class exclusively for hearing impaired students, either in the regular school or in a special school for the deaf.

Decisions regarding the most appropriate placement setting must be based on the needs of the student, which are documented in the student's IEP.

What does it cost to educate the hearing impaired?

There is no question that the cost of educating hearing impaired children will be higher than the cost for nonhandicapped children. This holds true, no matter what placement option may be selected, if a truly appropriate education is to be implemented.

The factors contributing to higher expenses are varied. The qualifications of teachers should include training and certification in deaf education. Specialized support personnel may include interpreters, sign and oral speech-language pathologists, audiologists, counselors, resource personnel/

tutors, parent educators, note takers, and psychologists. These support personnel should also be skilled in working with and communicating with deaf children. Support services may include transportation, after school and residential programs, special curricula and materials, orientation and inservice training for staff, aural-oral equipment, and visual educational technology. Because of the communication problems of deaf children and the intensive habilitation needed, class ratios are smaller, averaging 1:6 for the early grades and 1:10 for the more advanced classes. Some states, e.g., Oregon, have guidelines regarding the components of programs for deaf students.

What characteristics of the child should be considered when making placement decisions?

Placement decisions must be based on the individual needs of each child. The main child related criteria to analyze are:

- Communication and Language Skills. On what grade level is the child in English? At what age did the child become hearing impaired? Is the child's vocabulary and language such that communication can take place? What method of communication results in the greatest level of comprehension and participation? Does the child ask questions or seek out information? Is the child able to speak intelligibly and lipread sufficiently to participate meaningfully in classroom events? Can the child use or be trained to use an interpreter? Does the child depend exclusively on the interpreter for all communications and interactions in the classroom?

- Academic Performance. On what grade level is the child functioning for each subject?

- Degree of Hearing Loss. What type of hearing loss does the child have? Does a hearing aid contribute significantly to receptive communication? How well can the child discriminate sounds and words?

- Interpersonal Skills. How well does the child relate to peers? What type of personality is displayed? Does the child have close friends? Does the child interact with others successfully? Is active or passive participation shown in school events and organizations? Is the child emotionally mature?

- Motivation. Is the child eager or anxious to excel? What is the child's maturity level? Is the placement and program what the child wants? Does the child persist until satisfied? Does the child have friends with whom to compare notes? Does the child show curiosity and initiative?

- Secondary Educational Handicap. Does the child have additional handicaps that may cause educational problems? Visual impairments, specific learning disabilities, mental retardation, psychomotor problems, and emotional disturbances are some other educational handicaps hearing impaired children may have.

- Parental Support. Will the home environment supplement the child's educational program and development? Is communication at home good? Is the family supportive of the placement selection? Have arrangements for transportation to or from extracurricular activities been discussed? Does the child spend time at home alone, with parents, or with the neighborhood children?

What are the program characteristics to consider when making placement decisions?

In the past, children tended to be placed in whatever programs were available. But since P. L. 94-142, schools are required to provide programs and support services designed to meet the individual needs of the child.

The IEP/Placement team needs to have a working knowledge of all the possible placement options on the continuum and should analyze them carefully in order to select the best one. The following criteria should be considered:

- School Staff. Have the child's regular teachers been trained and prepared in education of the hearing impaired? Are the administration and staff supportive? Will someone trained in education of the deaf supervise the program? Are the needed resource people available for the full length of time needed? Does the school staff know about P. L. 94-142 and the IEP process?

- Support Services. Are the identified support services available and of good quality? Do support services personnel interact or team up with classroom teachers? Is there a procedure for staff discussions of the child's progress or problems? Can the support services personnel communicate with the child in his native language or communication mode? Is there consistency in the provision of the support services: personnel, equipment, and resources?

- Program. Are there classes that the child can readily benefit from? Are the ages and capacities of classmates comparable? Will intensive individualized work and attention be required for the child? Are the appropriate curriculum and materials available? Is captioned media used whenever possible? What steps are taken to ensure that the child

receives public address system announcements? Is there equal opportunity to participate in school organizations and activities? Is the school environment barrier free? Does the school practice affirmative action and employ staff with a handicap similar to the child's? Does interaction take place between special and regular classes?

- Overall Attitude. Have the staff and student population been prepared and informed about hearing impairments? Does the orientation program include information about hearing loss and amplification? Are sign classes available for the staff and students? Does the teacher treat the child fairly, without making special allowances for the hearing loss in terms of assignments and grades? Is the child accepted on his or her individual merits?

Does interaction take place between the child and the program?

The needs of the child should dictate the intensity and comprehensiveness of the program. If the child has minor needs, less will be required of the program. For example, the needs of a mildly hearing impaired child functioning on grade level and a profoundly deaf child functioning three grades below the norm are very different.

If a deaf child does grade level work, interacts somewhat with classmates, and participates in the newspaper and sports clubs, he or she may only need a speech-language pathologist two hours a week and a full time interpreter. The program, then, will be required to provide the speech-language pathologist for two hours, employ a full time interpreter, provide periodic audiological evaluations, and provide orientation and/or inservice training on deafness to the school program. The interpreter may also be available to teach sign classes to interested staff and students.

If a deaf child has severe communication and language deficiencies and functions several grades below the norm, an extensive special education program will be needed. This will require trained and experienced staff and resource personnel, specialized curriculum, and a variety of resources and opportunities for total development.

In summary, the child's IEP goals and objectives remain the same as originally stated. The main difference will involve selection of placement and services to enable the child to achieve appropriate goals.

Why are there special schools for the hearing impaired?

Every state in the U.S. has special schools and classes for the hearing impaired. The first state school for the deaf was established in Kentucky in 1823.

Hearing impaired children constitute a relatively low incidence population, about one hearing impaired child per 1,000 nonhandicapped children. That is, a school district of 25,000 children may have approximately 25 children of different ages and grade levels that need special education because of hearing impairment. Because of the intensive communication and learning needs of hearing impaired children, they require trained and qualified teachers, specialized teaching methods, and special services and resources.

Regular public schools and schools for the deaf may find it useful to collaborate on educational programs. Schools for the deaf offer a wealth of expertise, experience, and resources and can serve as resource centers, providing services and workshops to regular schools.

What is a barrier free environment for hearing impaired children?

The federal Architectural Barriers Act of 1968 requires federally funded programs to meet certain accessibility standards. This is reinforced by Section 607 of P. L. 94-142 and Subpart C of Section 504 of the Rehabilitation Act of 1973. Accessibility for hearing impaired students involves the elimination of communication barriers in general.

Programatic modifications may include: preferential seating; teacher knowledge of appropriate communications techniques; the use of oral or manual interpreters and notetakers; the availability of sign instruction classes, amplification systems, captioned or scripted media, telephone amplifiers or teletypewriters, and other visual aids. For example, how does a deaf student lipread a puppet show or receive loudspeaker messages?

Architectural modifications may include appropriate lighting, improved acoustics, selection of static free carpets, and a visual warning system with flashing lights instead of bells. For example, how will the student understand an interpreter during a movie with all the lights off? Just because the class is for hearing impaired students, does this mean it is feasible to put the class next to the typing room or above the boiler room?

A barrier free environment for a deaf child means a communicative environment, where the child fully understands what is happening; has equal opportunity and access to information, programs, and events; and is able to become a participating and contributing member of the group.

What support services are needed for hearing impaired children?

For many hearing impaired children the IEP will specify several support or related services. Services should be related to the child's goals, objectives, and needs, including social, psychomotor, emotional, and communicative as well as academic needs. The nature of the placement option will also determine the need for specific services. For example, a deaf child in a mainstreamed situation may need an interpreter; this may be unnecessary in a special class for the deaf. Furthermore, the Department of Education states that needed special services are to be specified in the IEP regardless of availability.

The following ongoing special and/or related services and resources may be needed for a hearing impaired child:

- Psychological testing
- Community-family-home program
- Vocational evaluation
- Personal counseling/guidance
- Family counseling
- Medical services
- Special education evaluations
- Advanced study in nearby college
- Cooperative education with nearby schools
- Interpreter services
- Communication and language evaluation (speech, audiological, manual)
- Communication therapy
- Audiological equipment
- Notetaking
- Visual perception training
- Hearing aid loans, services, repairs
- Tutorial services
- Organized after school activities (related to social skills, conceptual development, or self help skills)
- Orientation services (for work or alternative education experiences)
- Curriculum specifically adapted to reinforce language growth
- Transportation
- Physical and occupational therapy
- Parent education
- Captioned or scripted media
- Telephone amplifiers, teletypewriters

The determination of support services is contingent upon the individual child's goals and needs, and upon the characteristics of the selected placement.

What is an interpreter?

An interpreter serves as a communication bridge between a hearing impaired person and nonhandicapped persons. The interpreter may translate spoken communication into signs or restate/rephrase orally to the hearing impaired student. If the student's speech is not intelligible to others, the interpreter will restate the student's comments.

What is a note taker?

A note taker listens to classroom lectures and discussions and writes down the main ideas and related information for the student. This service is usually used in the more advanced grades. The person performing this task may be a professional note taker, an older student, or possibly a classmate who does excellent academic work. A special carbon free paper may be used to make instant multiple copies.

A less preferred but workable alternative is for the teacher to develop an outline of the main ideas and related information to give students.

How may the curriculum vary for hearing impaired students?

The general curriculum should be comparable to that in regular schools; that is, the basic subject areas should be covered. The difference may be with the entry point and the length of time required to cover a topic. Communications and structured language plans are two vital areas needing specialized instruction and educational technology. Materials appropriate for high interest, low language students may be needed, as well as career education and independent living skills. Bilingualism (English and American Sign Language) may also be a consideration in curriculum development.

It is vital to understand linguistic principles, to have a valid assessment of the child's performance skills, and to know the contents of the child's IEP in order to implement a meaningful program based on a general curriculum plan.

What part do deaf adult role models play in the child's education?

Section 606 of P.L. 94-142 requires "each recipient of assistance under this Act to employ and advance in employment qualified handicapped individuals in programs assisted under this Act." This is also covered by Section 504 of the Rehabilitation Act of 1973.

Having deaf employees, teachers, and professionals in any program serving hearing impaired children is imperative. Deaf models serve as sources of identification and inspiration and possess the empathy and communication skills needed to promote the educational growth and well being of hearing impaired children.

Many deaf teachers and professionals hold college degrees and are certified by the Council on Education of the Deaf (CED). However, a "Catch 22" situation continues to exist in a few states where certification as a regular classroom teacher is required for special education certification. This automatically prevents employing a deaf teacher in a special education program in a regular school, unless the state accepts a CED certification as an equivalent measure or includes reasonable modifications in its certification requirements.

Programs should invite deaf guest speakers to discuss a variety of subjects, including themselves and their jobs. Deaf adults live in almost every large community. Each state has a State Association of the Deaf, and clubs and religious organizations especially for the deaf.

What are the inservice needs of the regular school staff?

P. L. 94-142 and most state laws specify that inservice training be provided for regular class teachers who work with exceptional children.

A general orientation to deafness is a vital first step toward enhancing knowledge about and positive attitudes toward deaf children. Inservice training for staff who have direct relationships with and responsibilities for hearing impaired students should be ongoing. A few of the topics that should be covered include: deafness and its ramifications, communications, education, physiology, psychology, techniques, and roles of various support personnel. Information on assistance and resources can also be provided.

Resource people who can conduct inservice training may be available from a school for the deaf, a nearby university program for teachers of the deaf, or Gallaudet College.

Do nonhandicapped students need an orientation program?

It is important for nonhandicapped students to understand and to feel comfortable about deafness. An orientation to deafness may include general information on hearing losses, hearing aids, lipreading, fingerspelling and sign language, function of the interpreter, and involvement of the deaf child in activities and discussions. Various books and materials are available for children. There are also some simulation activities, such as

talking in a foreign language, watching a foreign movie, watching TV with the sound off, talking without voice, or blurring sound with special ear plugs. These experiences help to enhance understanding of hearing impairments. Sign classes aid greatly also.

Why is an educational program for the parents of the hearing impaired important?

There is no question about the role of the parents in their child's development. P. L. 94-142 guarantees certain rights and expectations for parents as members of their child's educational team. However, there has been minimal effort to provide information and training to parents about their child's hearing impairment and educational program. Communication, one of the key forces holding a family together, becomes problematic for a family with a deaf child. The workings of special education programs may be mysterious.

Yet parents are expected to become partners with the school in their child's development. The opportunity for quality parent education programs is provided by P. L. 94-142, and must be offered in order to create productive home-school relationships.

Some of the topics covered by a school based parent education program include deafness, education, relationships within the home, communications, parenting, child development, P. L. 94-142 rights and processes, evaluation, curriculum, and sign language.

The school may also desire information about inservice training to help professionals communicate and work more effectively with parents and about organizations for parents of hearing impaired children.

What resources are available in each state?

Resources are available in every state relative to deafness, education of the deaf, assessment and evaluation, and IEP development. The following groups and organizations are excellent referrals for workshops, consultancies, references, resources, and information:

- School for the deaf
- Larger school districts/cities with programs for the hearing impaired
- State Association of the Deaf
- State Chapter of the International Association of Parents of the Deaf
- State Chapter, Registry of Interpreters of the Deaf
- State Commission on the Deaf
- Vocational Rehabilitation Agency

- University Libraries, and Special Education Departments, Departments of Communication Disorders, and Departments of Audiology and Speech Pathology
- City and County Government Offices
- Mayor's Committee on Handicapped/Aging
- State Departments of Education

AGENCIES

A. G. Bell Association for the Deaf, Inc., 3417 Volta Place, N.W., Washington, DC 20007

International Association of Parents of the Deaf, 814 Thayer Ave., Silver Spring, MD 20910

National Registry of Interpreters for the Deaf, 814 Thayer Ave., Silver Spring, MD 20910

National Technical Institute for the Deaf, 1 Lomb Memorial Dr., Rochester, NY 14623

Special School of the Future Project, Gallaudet College, Washington, DC 20002

ADDITIONAL RESOURCES

Bishop, M.E. (Ed.). Mainstreaming: Practical ideas for educating hearing impaired students. Washington, DC: A.G. Bell Association for the Deaf, 1979.

Brill, R.G. Mainstreaming the prelingually deaf child. Washington, DC: Gallaudet College Press, 1978.

Brill, R., Merrill, E., & Frisina, D. Recommended organizational policies in the education of the deaf. Washington, DC: Conference of Executives of American Schools for the Deaf, 1973.

Katz, L., Mathis, S., & Merrill, E. The deaf child in public schools: A handbook for parents of deaf children. Illinois: Interstate Printers and Publishers, 1974.

Spradley, J., & Spradley, T. Deaf like me. New York: Random House, 1978.

ANNOTATED BIBLIOGRAPHY

The following annotated bibliography was selected from the ERIC and the Exceptional Child Education Resources (ECER) data bases. Unless otherwise noted, ERIC documents can be ordered from EDRS, P. O. Box 190, Arlington, VA 22210.

Birch, Jack W. Hearing impaired pupils in the mainstream, 1975. 106 p. ED 117 904.

Provided primarily for regular class teachers and administrators is information on mainstreaming hearing impaired students. Reasons behind the movement toward regular class placement of hearing impaired pupils are noted and two basic views as to how it should be done are identified. Defined are relevant terms such as "mainstreaming," "hearing aid," and "hearing impaired." A chapter on the influence of hearing impairment on education includes discussion of the nature of the hearing defect, and differences in educational needs of deaf and hard of hearing pupils. In a section on characteristics of successful mainstreaming, the topics of instructional settings and pupil characteristics are listed and five principles basic to mainstreaming (such as teaching toward hearing-world participation) are explained. Guidelines presented for successful mainstreaming include a model for preservice and inservice preparation, suggestions for regular class teachers and administrators, and information on professional roles and facilities. The second half of the book consists of descriptions of various complete and partial approaches to mainstreaming in 10 public school systems and four residential schools. It is explained that the programs were chosen to represent a range of sizes and geographical locations.

Brill, R. G. Mainstreaming the prelingually deaf child, 1978. 206 p. Available from Gallaudet College Press, Washington, DC 20002. ($5.95).

Many educators of hearing impaired children are concerned that in the race to mainstream handicapped children, the handicap of prelingual deafness will not be recognized or taken into account. In Mainstreaming the Prelingually Deaf Child, Richard Brill investigates the actual status of prelingually deaf children in various patterns of mainstreamed education. In addition, Dr. Brill looks at the different forms of special education programs, identifies support services necessary to carry them out, and discusses the advantages and disadvantages of such programs with educators in the field. This reference is designed to meet the needs of professional educators of deaf children and to facilitate the planning of appropriate alternative programs for prelingually deaf children.

Educational programs and services, 1977. 14 p. Available from American Annals of the Deaf, 5034 Wisconsin Avenue, NW, Washington, DC 20016.

Provided is a collection of materials relating to educational programs and services for hearing impaired children. The following are included: A paper titled "School Achievement of Hearing Impaired Children—National Data on Achievement Status and Growth Patterns" by R. Trybus and M. Karchmer;

"Statement on Least Restrictive Placements for Deaf Students" adopted by the Conference of Executives of American Schools for the Deaf; a listing by state, with such program information as students served and educational staff employed, of schools and classes for deaf children in the US; a tabular summary of schools and classes for the deaf in the US; a listing of program information for schools and classes for the deaf in Canada; a financial statement (in graph form) of public residential schools for the deaf in the US; listings by state of postsecondary facilities for the deaf, centers for deaf-blind children, and university programs offering personnel training; and the names of administrative personnel in federal offices providing services for the education of deaf children and youth.

Ewoldt, Carolyn. Mainstreaming the hearing impaired child: Process not goal, 1979. 14 p. ED 168 275.

Issues involved in mainstreaming deaf and hearing impaired students are examined. The child's acceptance by hearing peers, possible psychological immaturity, controversies over manual communication and oral language, and factors affecting student placement are among the issues explored. Suggestions are given for classroom teachers working with mainstreamed hearing impaired students.

Horton, Muriel. Mainstreaming for deaf children: A step forward. Disabled USA. 1977. 5 p. Available from President's Committee on Employment of the Handicapped, Washington, DC 20002.

A deaf adult looks back over her experiences in the public schools and suggests that P. L. 94-142, the Education for All Handicapped Children Act, should be interpreted to allow for mainstreamed placement or special residential placement depending on individual needs of deaf students.

Jacobs, Leo M. A deaf adult speaks out. 1974. 145 p. Available from Gallaudet College Press, Washington, DC 20002 ($4.80 hard cover; $2.40 paper).

A deaf adult combines his own experiences and other sources to convey a personal view of deafness. Chapters focus on the following topics: what deafness means; what communication really is; the deaf as a minority group; traditional educational methods; total communication in education; the deaf adult (including types of deaf adults and a psychological perspective); the adult deaf community; the economic aspects of deafness; and what is being done for the deaf (such as continuing education). Appendixes include the views of seven deaf persons from divergent educational backgrounds, and the problems encountered by a deaf blue collar worker in a typical day.

Jordan, I. K., Gustason, G., & Rosen, R. Current communication trends at programs for the deaf. American Annals of the Deaf, Vol. 121, No. 6, December 1976. 6 p. Available from American Annals of the Deaf, 5034 Wisconsin Avenue, NW, Washington, DC 20016.

A survey was done of communication modes presently used in schools and classes for the hearing impaired to determine frequency of use of various modes, both as the primary mode of communication and as a supplementary mode in special situations. Any recent change was reported as previous mode, present mode, class level affected, and year of change. The 796 responses (82% of those surveyed) indicate a large and continuing trend, with more than 64% of the reporting classes now using total communication. Questions were also asked about the provision of classes to teach sign language, the sign language book considered the primary reference, and whether standardization of signs was considered within the program.

Jordan, I. K., Gustason, G., & Rosen, R. An update on communication trends at programs for the deaf. American Annals of the Deaf, Vol. 124, No. 6, June 1979. 8 p. Available from American Annals of the Deaf, 5034 Wisconsin Avenue, NW, Washington, DC 20016.

This study was a followup of an earlier survey reported in the December 1976 Annals on communication trends in schools and programs for the hearing impaired in the US. Although a lower response rate makes direct comparison of numbers impossible, the percentage of classes using the various communication modes is consistent with the earlier study, despite responses from only 25% of the state residential schools for the deaf. A modification in the question on recent mode changes points to an even more dramatic rate of change in the early 1970's and a continuation of the trend toward total communication. A shift towards the use of manual English sign texts is noted. Questions were added concerning the enrollment of hearing impaired students in classes for nonhandicapped children (mainstreaming) and the provision of interpreters for such classes.

Karchmer, Michael A., & Trybus, Raymond J. Who are the deaf children in "Mainstream" programs? 1977. 8 p. ED 148 073.

The paper examines the extent of integrated placement (mainstreaming) of hearing impaired children in the US and describes a variety of educationally salient characteristics of these students. As compared with hearing impaired children in other types of educational programs, students in integrated programs are reported to have significantly less severe hearing loss, higher family incomes, and other distinctive characteristics. It is noted that programs are presently serving a group of hearing impaired children who are very different on many educationally critical dimensions from those children who attend other types of special education programs.

Mindel, Eugene D., & Vernon, McCay. They grow in silence. 1971. 118 p. Available from National Association of the Deaf, 950 Bonifant Street, Silver Spring, MD 20910.

The book on the deaf child and his family contains psychological and psychiatric information related to deafness. The discussion of the hearing man's bias, i.e., how he interprets the deaf person's life, is aimed at uncovering the origin of these biases. The impact of the deaf child on his family is examined, including the reaction of the parents, their various feelings following the confirmation

of deafness in the child, and the role of the professional. The primary causes of deafness are explained. The discussion of issues in the testing of hearing is intended to acquaint the parent with what he may expect during the evaluative process. Also covered are the social, educational, and language development of the deaf child, with emphasis on growth of language from a psychological and psycholinguistic point of view; the values of total communication over oralism; and the vocational, educational, and psychological outcomes of deafness, in which various research studies are summarized.

Nix, Gary W. The least restrictive environment. Volta Review, 1977. 10 p. Available from Volta Review, 3417 Volta Place, NW, Washington, DC 20007.

The concept of the least restrictive environment for hearing impaired children is viewed in terms of legal implementation, organizational viewpoints, and procedures for determining the least restrictive environment. Obstacles to the implementation of the concept are seen to include reluctance on the part of both parents and local educational agencies.

Nix, Gary W. Mainstream placement question/check list. Volta Review, 1977. 2 p. Available from Volta Review, 3417 Volta Place, NW, Washington, DC 20007.

Presented is a check list of child, placement situation, and family parameters which contribute to successful mainstream placement for hearing impaired students.

Nix, Gary W. (Ed.). The rights of hearing impaired children. 1977. 88 p. Available from Alexander Graham Bell Association for the Deaf, 3417 Volta Place, NW, Washington, DC 20007 ($3.95).

The book presents 10 papers on the educational rights of hearing impaired children. A discussion of historical and educational perspectives covers such aspects as early attitudes toward the hearing impaired, and the rise of oral schools in the US. The development of legal rights for handicapped citizens is approached in terms of such topics as the right to free public education and the choice of placements. The relationship between parents and the Education for All Handicapped Children Act (P. L. 94-142) is examined, focusing on the development of the individualized education program, the definition of the least restrictive environment, and due process. Educational options covered include various educational settings, such as day schools, mainstreaming, resource rooms, supportive services, special classes, home programs, residential schools, and related services. The least restrictive environment is examined in depth, along with the parents' role in their child's educational process. A detailed case history of a due process hearing is presented. The cooperation between disability groups, parents, and professionals is examined, along with legal remedies in education and employment. A final chapter discusses unmet legislative needs pertaining to the rights of hearing impaired children. Appended are a mainstream placement checklist, a summary of policies for the development of written individualized education programs, and a list of related organizations pertaining to hearing impaired children.

Oregon State Department of Education, Salem. Education of the hearing impaired: Suggested Oregon guidelines for determining the most appropriate educational placement of hearing impaired children, 1978. 42 p. ED 177 776.

The booklet presents Oregon's guidelines regarding the most appropriate/least restrictive placement of hearing impaired students. Guidelines address the following topics (sample subtopics in parentheses): identification (school screening, failure criteria, followup); referral; assessment (criteria, records, parent rights, group and individual tests); staffing (composition and function of committee); placement (parental involvement, direct placement of transfer student, tuition placement, residential or regional program placement); review staffings; service standards (delivery method alternatives, program standards, support services, staff standards); instructional materials for the deaf; special education equipment for the deaf; facilities; transportation; and preschool programs (early identification, diagnostic evaluation and referral, selection and fitting of amplification, and personnel preparation). Appended are a referral checklist and a matrix on placement alternatives (ranging from special class in a residential school to consultant service by a teacher of the deaf).

P. L. 94-142 and Deaf Children, 1977. 24 p. Available from the Gallaudet College Alumni Association, 7th and Florida Ave., N.E., Washington, DC 20002.

Contents include an analysis of P. L. 94-142, issues in assessment of hearing impaired children, the IEP and purpose, contents, participants, and process, the concept of the least restrictive environment as related to deafness, implications for mainstreaming, due process rights, parent advocacy, guidelines for advocacy, providing an appropriate education, expanded roles for special schools, implementation of P. L. 94-142 in the Kendall Demonstration Elementary School and the Model Secondary School for the Deaf, and resources/organizations.

Rosen, Roslyn. A parent's guide to the individualized education program (IEP) as required by P. L. 94-142 (Education for all handicapped children act), 1978. 32 p. ED 166 914.

The guide, written in a self instructional format, analyzes the role of parents in developing an individualized education program (IEP) for handicapped children. The following topics are addressed: an overview of P. L. 94-142, the Education for All Handicapped Children Act, civil rights guaranteed by P. L. 94-142, and development, content, legal requirements and followup of IEP's. Seven hypothetical situations involving parent participation in IEP's are provided.

Testut, E.W. & Baldwin, Richard L. Educational options. Volta Review, 1977. 6 p. Available from Volta Review, 3417 Volta Place, NW., Washington, DC 20007.

Identified are seven educational options and related services for determining individualized education programs of aurally handicapped students. Options are seen to range from complete mainstreaming to home programs, with such related services as transportation, speech and hearing services, and recreation.

Vernon, McCay & Athey, Judy. The Holcomb plan. A creative approach to mainstreaming deaf and hard of hearing children. Instructor, 1977. 2 p. Available from Instructor Publications, Inc., Danville, NY 14437.

Described is an approach which uses total communication to mainstream deaf and hard of hearing students, and listed are guidelines for selecting students to be mainstreamed and for making classroom adjustments.

Vernon, McCay, et al. Mainstreaming: Issues and a model plan. Audiology and Hearing Education, 1976. 4 p. Available from Audiology and Hearing Education, 15300 Ventura Blvd., Suite 301, Sherman Oaks, CA 91403.

The authors discuss issues relevant to mainstreaming deaf children, various approaches which have been tried with little success, and a model program in Newark, Delaware, which involves use of total communication and tutor-interpreters.